



**MATH ENRICHMENT PROGRAM**  
**PATTERNS & LINES**

Day 3

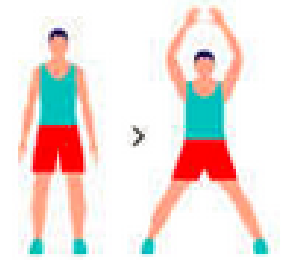
# DISCUSSIONS

Good job!

# WARM UP

DEAD BODY  
MY

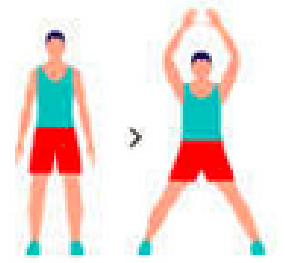
BRAIN  
KIDNEY  
HOME  
HEART



Ci ii

# WHAT IS *DIFFERENT* OR WHAT IS THE *SAME*?

CHOOSE 2 NUMBERS, DESCRIBE HOW THEY ARE DIFFERENT OR THE SAME.



49

2

11

25

23

35

62

205

# POP – UP #1

1) What is the *rule* for  $f(x)$

A)  $f(x) = -3$

B)  $f(x) = 2x$

C)  $f(x) = -3x$

D)  $f(x) = 6$



x	f(x)
-10	30
2	-6
-2	6
5	-15



# POP – UP #2

2) Fill in the blank,

3, 9, 27, \_\_\_\_\_, 243, 729.

A) 45

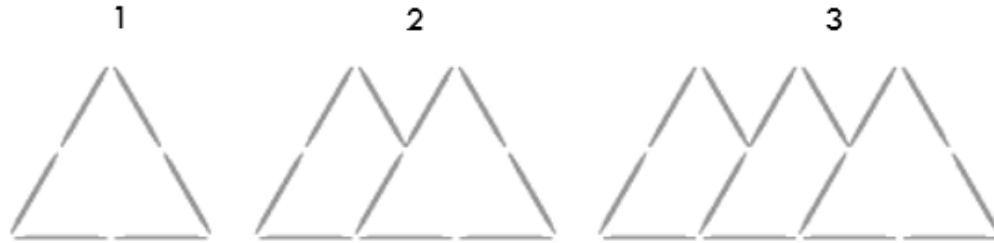
B) 81

C) 108

D) there is no pattern



# POP – UP #3



We found the general rule for building the  $n$ th-triangle pattern is

The # of needed toothpicks is the pattern # times 4 then we add 2 more toothpicks:

$$T = 4n + 2$$

SO, how many toothpick would we need to build the 25<sup>th</sup>-tiangle pattern?

A) 25

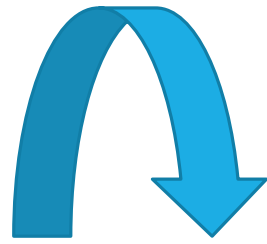
B) 102

C) 54

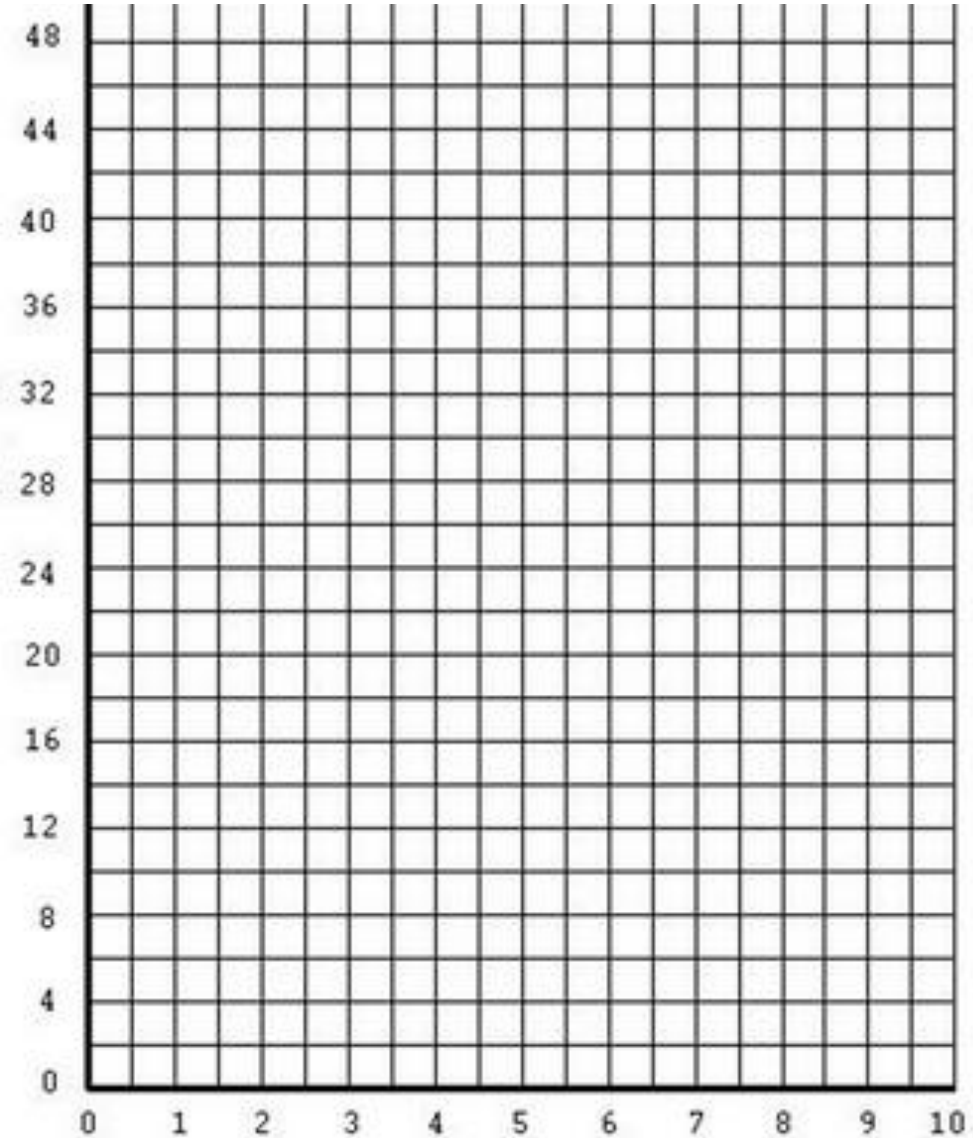
D) 98

# LOOK BACK

$$T = 4n + 2$$



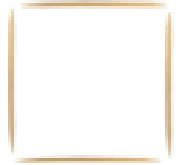
n	T
1	6
2	10
3	14
4	18
5	22
6	26
7	30
	34
	38
	42
11	46





SO, WHAT DO YOU THINK IS THE RULE FOR THIS PATTERN ?

1



2



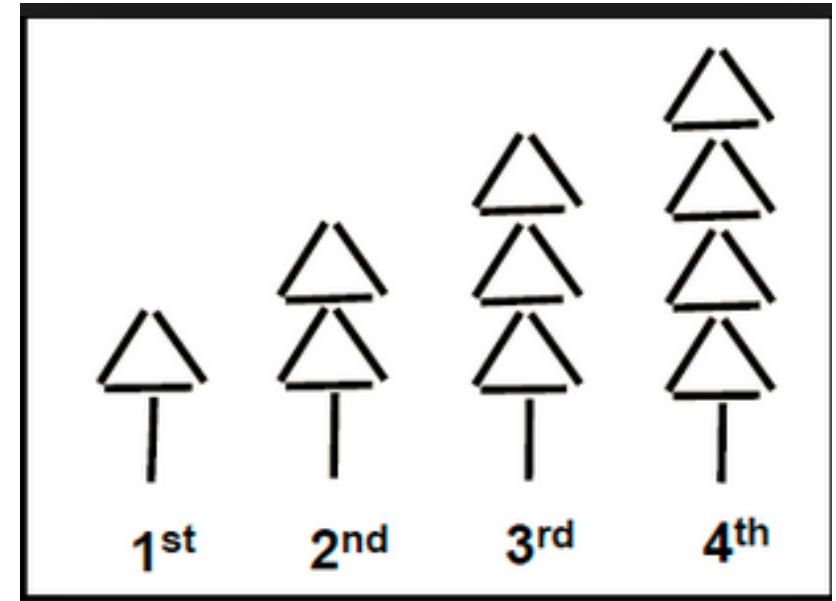
3



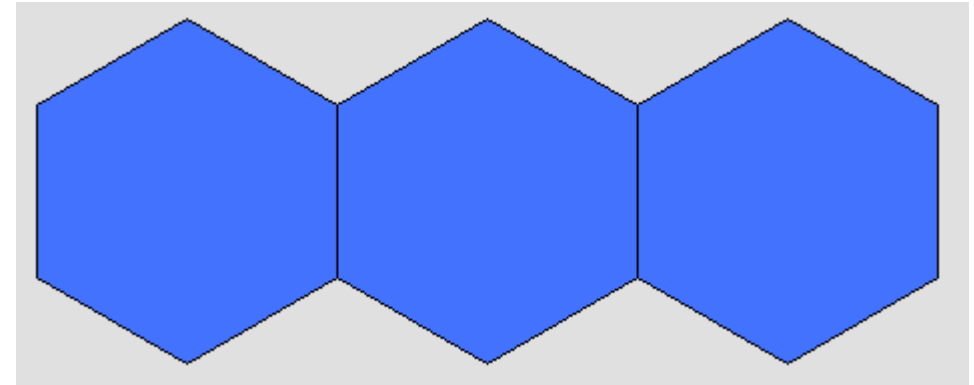
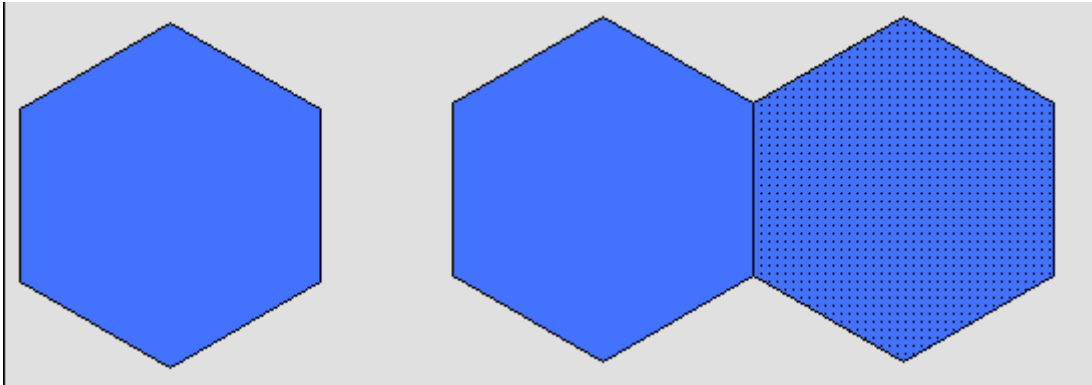
4



SO, WHAT DO YOU THINK IS THE RULE FOR THIS PATTERN ?



SO, WHAT DO YOU THINK IS THE RULE FOR THIS PATTERN ?



# POP – UP #4

4) Fill in the blank,

2, 3, 5, 7, \_\_\_\_\_, 13, 17, ...

A) 9

B) 8

C) 11

D) 10



# POP – UP #5

5) If  $\frac{x+1}{3} = \frac{x+3}{4}$ , then  $x = ?$

A) 8

B) -7

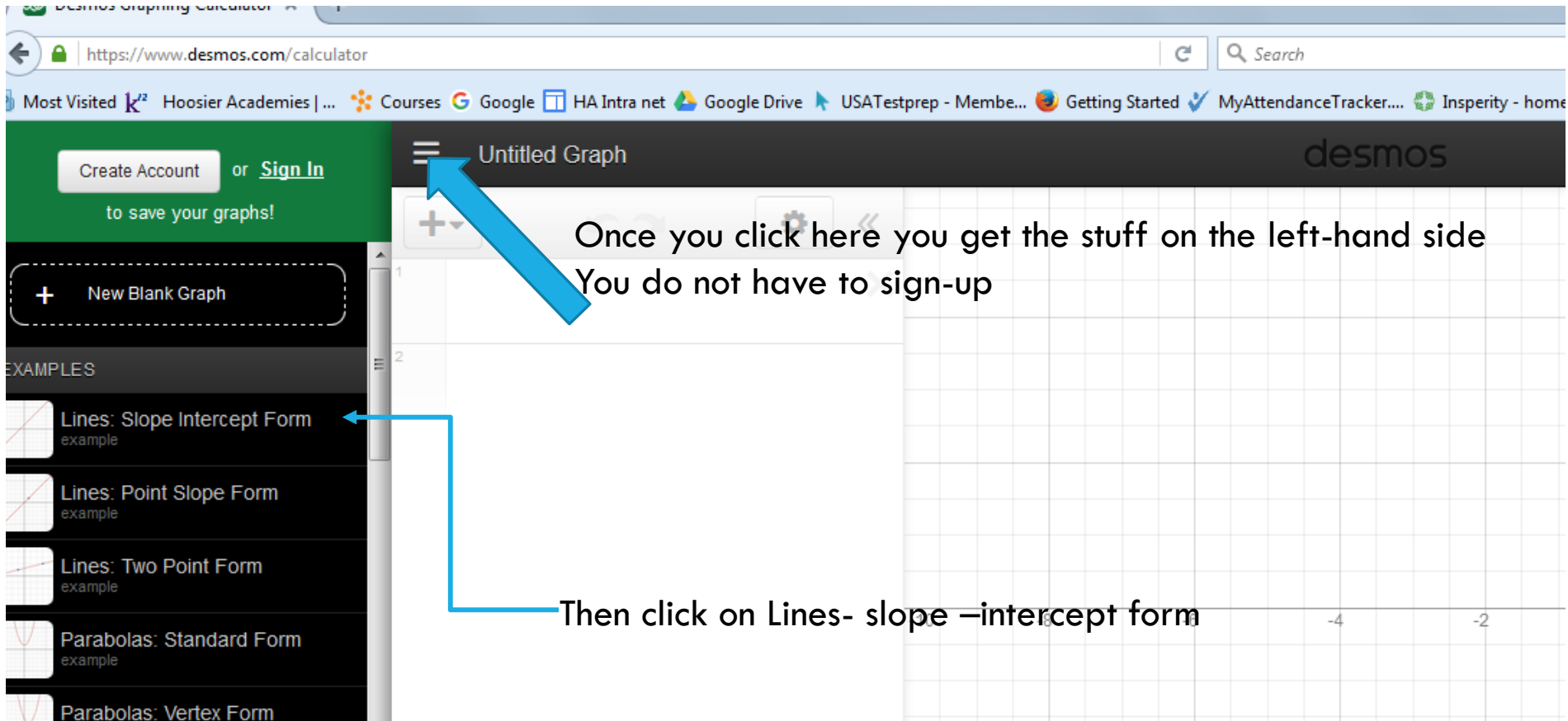
C) 5

D) 0



# GRAPH LINES AND SHOW SLOPE AND Y INTERCEPT

<https://www.desmos.com/calculator>



The screenshot shows the Desmos Graphing Calculator interface. The browser address bar displays <https://www.desmos.com/calculator>. The page title is "Untitled Graph" and the Desmos logo is visible in the top right. A green banner at the top left contains the text "Create Account or Sign In to save your graphs!". Below this is a "New Blank Graph" button. A sidebar on the left lists "EXAMPLES" with categories: "Lines: Slope Intercept Form example", "Lines: Point Slope Form example", "Lines: Two Point Form example", "Parabolas: Standard Form example", and "Parabolas: Vertex Form example". A blue arrow points from the text "Once you click here you get the stuff on the left-hand side You do not have to sign-up" to the hamburger menu icon in the top left. Another blue arrow points from the text "Then click on Lines- slope -intercept form" to the "Lines: Slope Intercept Form example" option in the sidebar.

Once you click here you get the stuff on the left-hand side  
You do not have to sign-up

Then click on Lines- slope -intercept form

# SUMMARY

Please write on the board

Write **TWO** things you learned in this session